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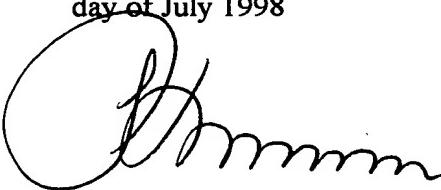
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I, KIM MARSHALL, MANAGER EXAMINATION SUPPORT AND SALES,
hereby certify that the annexed is a true copy of the Provisional specification in
connection with Application No. PO 7619 for a patent by STEPHEN JAMES DAVIS
filed on 30 June 1997.

I further certify that the annexed specification is not, as yet, open to public
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WITNESS my hand this Eighth
day of July 1998


KIM MARSHALL
MANAGER EXAMINATION SUPPORT AND
SALES

STEP APPARATUS

AUSTRALIAN PATENT OFFICE

This invention relates to step apparatus.

This invention has particular but not exclusive application for step apparatus to allow easier access to the rear of tray back utility vehicles and for illustrative purposes reference will be made to such application. However, it is to be understood that this invention can be used in other applications such as providing steps on the rear of vehicles generally.

In the use of utility vehicles, it is common that the operator must stand on the bumper bar or towing hitch in order to reach into the trayback. The towing hitch is, with hitch ball installed, a curved surface, often greasy, which is not a safe support for standing. Where the ball is removed, the hitch is of limited dimension, may also be greasy and generally does not form a safe step.

The present invention aims to alleviate at least one of the foregoing disadvantages and to provide step apparatus which will be reliable and efficient in use.

With the foregoing and other objects in view, this invention in one aspect resides broadly in step apparatus comprising:

a mounting portion adapted to engage the towing hitch of a vehicle; and

a step portion supported on said mounting portion.

The mounting portion may take any suitable form dictated by the form of towing hitch on the vehicle. For example, the mounting portion may comprise a metal or reinforced plastic

mounting member or complimentary section to the box section hitch mount provided on heavier utilities and four wheel drive vehicles, as well as some sedans. Alternatively, the mounting portion may comprise a body member having a threaded stud
5 adapted to engage the hitch ball aperture in a conventional gooseneck. In a yet further embodiment of the invention, the mounting means may comprise a body member adapted to engage the hitch ball of the towing hitch.

In the case of the complimentary body portion adapted to
10 engage the heavy duty towing hitch mount of a utility or four wheel drive, the body portion is preferably provided with a transverse aperture or tube adapted to register with the locking pin holes in the vehicle hitch mount whereupon the body member may be locked into engagement therewith with the
15 standard pin otherwise used to engage the removable towing hitch.

In the case of the apparatus adapted to engage the hitch ball, the body portion may comprise a socket or the like adapted to pass over the towing hitch ball, preferably
20 extending down to bear squarely on the gooseneck. The socket is preferably associated with interengagement means adapted to secure the socket on the hitch ball. The lower end of the body portion may be adapted to pass down the sides of the gooseneck whereupon the apparatus may be locked in position beneath the
25 gooseneck by a locking pin or the like.

The step portion may be integrally formed with the mounting portion or may be separable therefrom. For example, the step portion may be integrally formed of moulded plastics

The step portion may be integrally formed with the mounting portion or may be separable therefrom. For example, the step portion may be integrally formed of moulded plastics with the mounting portion. Alternatively, the step portion may

- 5 be bolted to the mounting portion, or in the case of metal assemblies may be welded thereto. As a yet further alternative, the step portion and mounting portion may be integrally cast in metal or plastic.

In order that this invention may be more readily

- 10 understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred embodiment of the invention and wherein:

Fig 1 is an exploded view of a first embodiment of the present invention;

- 15 Fig 2 is an exploded view of alternate apparatus in accordance with the present invention;

Fig 3 is an exploded view of yet further alternate embodiment of the present invention, and

- 20 Fig 4 is an exploded view of yet further alternate embodiment of the present invention.

In Fig 1 there is provided a step apparatus 10 adapted to engage a vehicle towing hitch mount 11 which comprises a metal box section having an end opening 12 and a transverse drilling 13 adapted to receive a locking pin 14.

- 25 The step apparatus comprises a mounting portion 15 of complimentary box section to the end opening 12 and corresponding pin apertures 16 adapted to register with the apertures 13 on insertion of the mounting portion 15 in the

opening 12.

Welded to the mounting portion 15 is a metal step portion 17 having a non-slip textured surface 20.

In the embodiment illustrated in Fig 2, ultimate step 5 apparatus 21 comprises a mounting portion 22 having downwardly depending threaded stud 23 at the inner end thereof and welded on step portion 24 at the outer end thereof. The step portion 24 is provided with a non-slip upper surface 25. The threaded stud 23 is adapted to engage the hitch ball aperture 26 of a 10 conventional gooseneck 27, and secured in position thereon by virtue of securing nut 30.

In the embodiment illustrated in Fig 3, there is provided step apparatus 31 comprising an integral metal casting having an upper step portion 32 having non-slip surface 33, and 15 integrally formed mounting socket portion 34. The socket portion 34 is adapted to pass over the hitch ball 35 as installed on a conventional gooseneck 36. The socket portion 34 has an upper domed inner surface 37 adapted to receive the spherical upper surface of the hitch ball 35 and a lower 20 substantially cylindrical flange portion 40 adapted to bear on the gooseneck 36. The flange portion 40 is provided with a slot at 41 adapted to receive a locking yoke 42 and is further provided with a locking pin aperture 43 adapted to register with a corresponding locking pin aperture 44 provided through 25 one arm of the locking yoke 42.

In the embodiment illustrated in Fig 4, there is provided step apparatus 45 comprising a mounting portion 46 in the form of a metal plate and provided with a pattern of bolt holes 47

corresponding to the threaded hitch mounting holes 50 provided on a vehicle bumper 51. A step portion 52 is welded to an upper edge of the mounting portion 46 and is provided with a non slip surface 53.

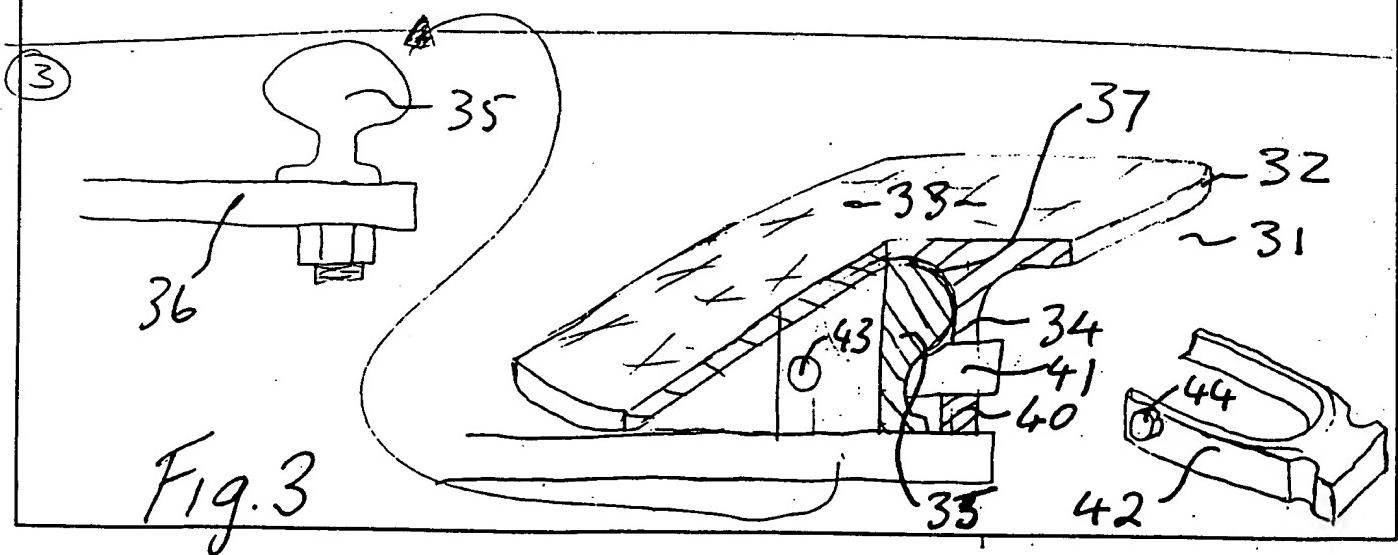
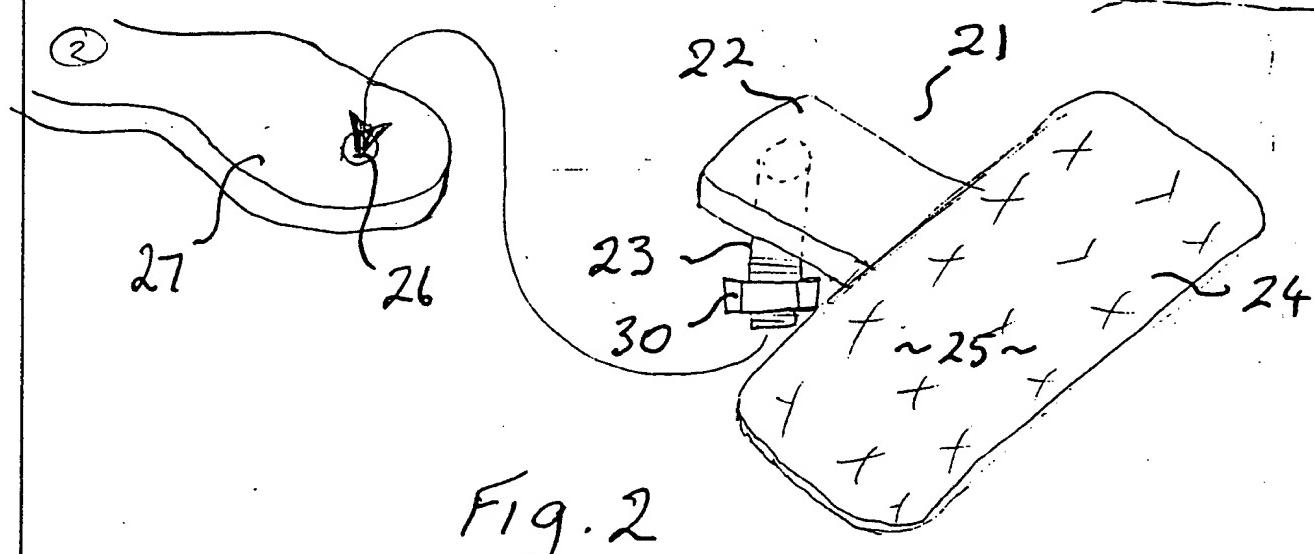
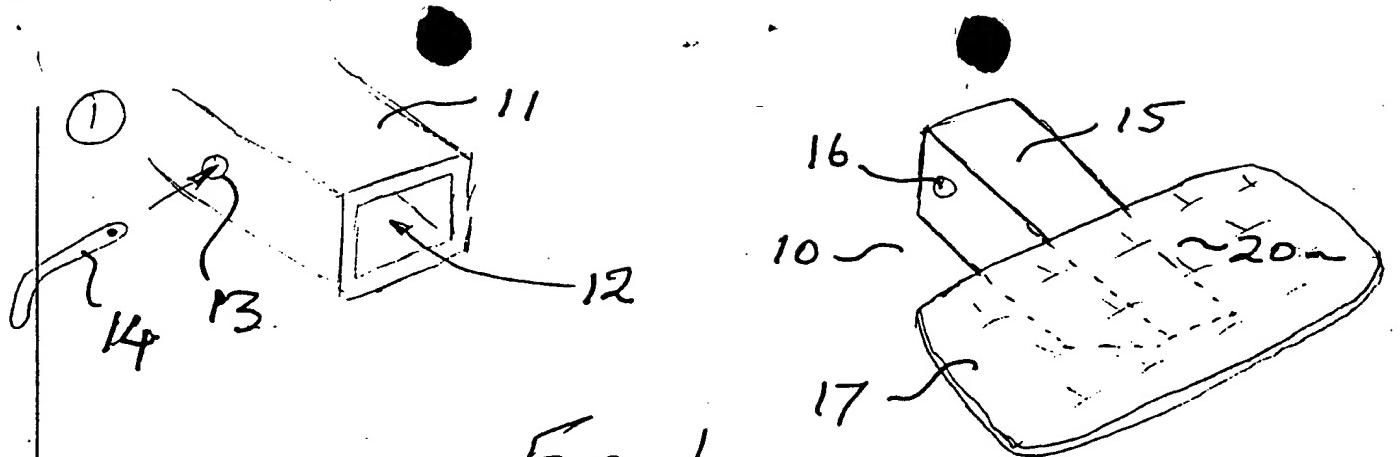
5 It will of course be realised that while the foregoing has been given by way of illustrative example of this invention, all such and other modifications and variations thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of this invention as is
10 herein set forth.

DATED THIS THIRTIETH DAY OF JUNE 1997.

STEPHEN JAMES DAVIS

BY

PIZZEYS PATENT AND TRADE MARK ATTORNEYS



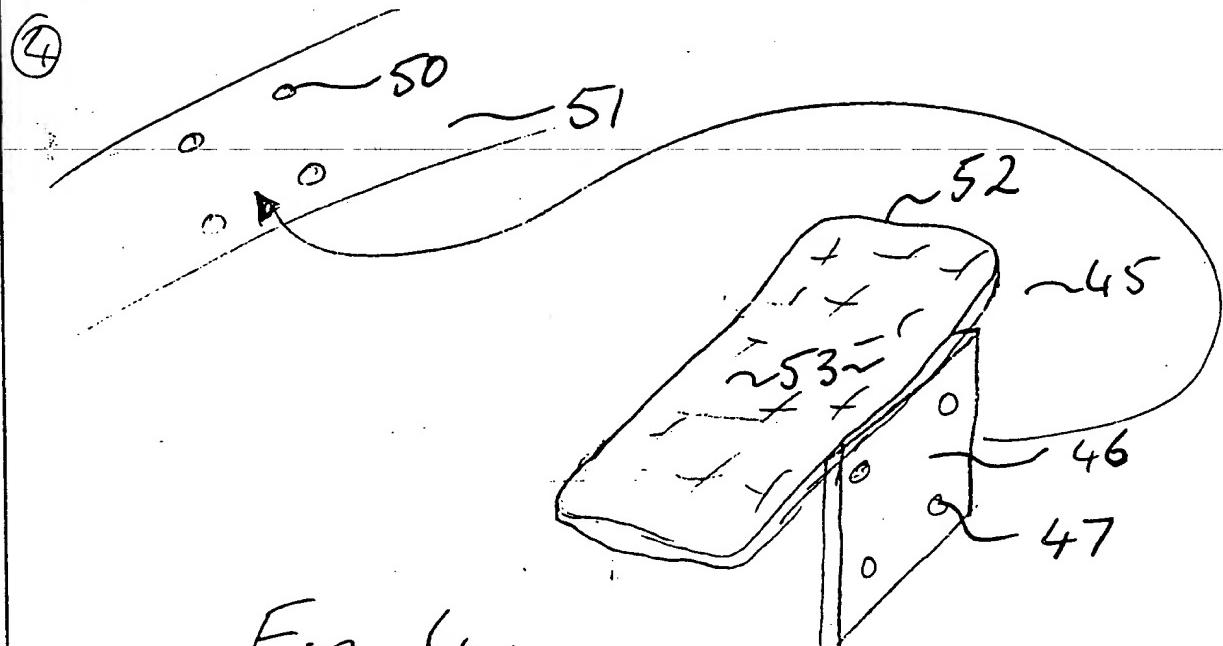


Fig. 4